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EXAMINER	
SMITH, JOSHUA Y	

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2419	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/727,726	KUURE ET AL.	
	Examiner	**Art Unit**	
	JOSHUA SMITH	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22 and 24-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22 and 24-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

The amendment filed 09/04/2008 has been entered.

- **Claims 1-22 and 24-30 are pending.**
- **Claim 23 is previously cancelled.**
- **Claims 1-22 and 24-30 stand rejected.**

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 12 states ”recognize or transmit post-speech packets which are transferable on a packet data channel”. The original specification does not define, describe, or state the word “transferable” and does not describe post-speech packets which are “transferable” and does not describe post-speech packets using the word “transferable” or “transfer”.

Claims 13 and 14 are rejected through dependence from Claim 12.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 states ”recognize or transmit post-speech packets which are transferable on a packet data channel”. It is unclear how post-speech packets are “transferable” on a packet data channel. Examiner will treat “transferable” in the limitations “transferable on a packet data channel” to indicate that a post-speech packet can be transmitted over any packet data channel of a communications link in any packet network and then be received by a network device.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 8, 9, 15, 16, 19, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell et al. (Document Number: EP 1 006 695 A1) in view of Bender (Patent No.: US 6,377,814 B1), Soulabail et al. (Pub. No.: US 2002/0071415 A1), and Simard et al. (Patent No.: US 6,940,826 B1), hereafter referred to as Forssell, Bender, Soulabail, and Simard, respectively.

As for Claim 1, Forssell teaches in paragraph [0015], lines 47-48, “uplink resource allocation” occurs when the “Mobile Station (MS) requests radio resources”. Forssell also teaches in paragraph [0026], line 15, “Downlink radio resource allocation”. Forssell also teaches in paragraph [0007], from line 58 of page 2 to line 1 of page 3, “packet data transmission between mobile data terminals”, implicitly teaching that transmissions between mobile terminals involve an uplink for a transmitting mobile station and a downlink for a receiving mobile station (communicating through a dedicated channel comprising both an uplink and a downlink).

Forssell shows in paragraph [0006], line 33, and Fig. 1a, page 14, “the core network of a cellular system 10” (substantively the same as “a core network” in instant invention).

Forssell shows in paragraph [0007], lines 51-55, and Fig. 1b, page 14, the “operational environment comprises one or more subnetwork service areas,” which are interconnected by a backbone network and where each “subnetwork comprises a number of packet data service nodes”, which provide a packet service for mobile data

terminals 151 via several base stations 152" (controlling a flow of data packets by at least one of a server function and a server in a core network).

Forssell fails to teach keeping up a dedicated channel downlink from a core network by sending post-speech packets for a time of duration, a server function in a core network transmits post-speech packets to a downlink after receiving a packet indicating an end of speech samples from an uplink, keeping up a dedicated channel after a last speech sample packet is sent downlink from a core network for a time of such duration that a new uplink can be established utilizing a downlink from a core network, and a dedicated channel comprising both an uplink and a plurality of downlinks.

Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal does not successfully decode any data frame or null frame on a traffic channel for a specified number maximum-zero-traffic periods, the access terminal declares a loss of its connection with a base station and stops transmitting, and, in column 6, line 59 to column 7, line 3, if a forward link data queue for an access terminal remains empty such that a maximum-zero-traffic period might elapse without sending a data packet to the access terminal, a wireless network transmits a "null data packet" to the access terminal, and where a supervisory period is at least twice as long as a maximum-zero-traffic period, to allow an access terminal to lose (due to communication error) a few null data packets without immediately releasing its connection, and since a maximum-zero-

traffic period can elapse without a data frame being sent to an access terminal, this implies that a maximum-zero-traffic period can exist after a period where a data frame **is** sent to an access terminal and contains a “last” data frame before a maximum-zero-traffic period starts, and where this “last” data frame originates from a device transmitting to the wireless network (keeping up a dedicated channel downlink from a core network by sending post-speech packets for a time of duration, a server function in a core network transmits post-speech packets to a downlink after receiving a packet indicating an end of speech samples from an uplink). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

Soulabail teaches in paragraphs [0034], [0048], and [0049], and in FIG. 3 and FIG. 6, a guard period (item 36, FIG. 3) is a variable quantity, and there a certain amount of delay (item 69, FIG. 6) between a downlink burst and a next following uplink burst (keeping up a dedicated channel after a last speech sample packet is sent downlink from a core network for a time of such duration that a new uplink can be

established utilizing a downlink from a core network). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Soulabail in the invention of Forssell since Soulabail provides a system where data is transferred downlink and uplink between a base transceiver station and a mobile station over a single channel through time division duplex, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of time division duplex in wireless communications since it conserves bandwidth by utilizing a single channel in both directions of communications, and Soulabail also provides a system that allows a variable guard time between downlink and uplink transmissions, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of a variable guard time since it allows adaptations to changes in variable communication conditions.

Simard teaches in column 9, lines 22-25, a talker selection algorithm could transmit empty voice data to terminals within a voice conference when there are no talkers selected in order to maintain continuous packet transmission (a dedicated channel comprising both an uplink and a plurality of downlinks). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Simard in the teachings of Forssell since Simard provides a system for voice conferences within packet-based communication networks that provides a reduction in transcoding, latency, and/or required signal processing power (see Simard, column 3, line 65 to column 4, line 15, and column 5, lines 53-59), which can be

introduced into the packet-based network of Forssell to allow efficient voice conferencing to users.

As for Claim 2, Forssell teaches in paragraph [0042], lines 40-41, “the network is informed at the end of an active period, on whether a passive period follows the active period or if the connection can be released” (substantively the same as “the server determining when the last speech sample packet is sent” in the instant invention).

Forssell teaches in paragraph [0044], lines 53-54, “on an uplink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels”, and in lines 56-57, “on a downlink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels” (substantively the same as “determining whether a terminal taking part in the session needs a new uplink” and “establishing said new uplink is established” in the instant invention).

Forssell does not teach “server sending at least one post-speech packet downlink to receiving terminals”.

Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal does not successfully decode any data frame or null frame on a traffic channel for a specified number maximum-zero-traffic periods, the access terminal declares a loss of

its connection with a base station and stops transmitting, (server sending at least one post-speech packet downlink to receiving terminals). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

As for Claims 8 and 9, Forssell shows in paragraph [0006] and in Fig. 1a, page 14, the network of “a cellular radio system” (substantively the same as “cellular network” in the instant invention).

Forssell teaches in paragraph [0013], lines 38 and 41, that “a Temporary Block Flow (TBF) is created for transferring data packets on a packet data channel” for services that include “voice services” (a last speech sample).

Forssell shows in paragraph [0007], lines 51-55, and Fig. 1b, page 14, the “operational environment comprises one or more subnetwork service areas,” which are interconnected by a backbone network and where each “subnetwork comprises a number of packet data service nodes”, which provide a packet service for mobile data

terminals 151 via several base stations 152” (A server in a cellular network comprising a receiver configured to receive a last speech sample packet in an uplink direction).

Forssell teaches in paragraph [0042], lines 40-41, that “the network is informed at the end of an active period, on whether a passive period follows the active period”, and, in paragraph [0044], lines 55-56, “on a downlink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels”, showing that a passive period can occur after an active period on an uplink channel and on a downlink channel, and a mobile station of the downlink channel can start transmitting on the channel (a server or a processing device configured to prolong the existence of downlinks for a time of such duration that at least one new uplink can be established from a receiving terminal).

Forssell does not teach a processing device configured to prolong an existence of a downlink by sending post-speech packets for a time of duration, an apparatus is configured to transmit post-speech packets to a downlink after receiving a packet indicating an end of speech samples from an uplink, a server or a processing device configured to prolong the existence of downlinks for a time of such duration that at least one new uplink can be established from a receiving terminal, and a plurality of downlinks.

Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal does not successfully decode any data frame or null frame on a traffic channel for a

specified number maximum-zero-traffic periods, the access terminal declares a loss of its connection with a base station and stops transmitting, and, in column 6, line 59 to column 7, line 3, if a forward link data queue for an access terminal remains empty such that a maximum-zero-traffic period might elapse without sending a data packet to the access terminal, a wireless network transmits a “null data packet” to the access terminal, and where a supervisory period is at least twice as long as a maximum-zero-traffic period, to allow an access terminal to lose (due to communication error) a few null data packets without immediately releasing its connection, and since a maximum-zero-traffic period can elapse without a data frame being sent to an access terminal, this implies that a maximum-zero-traffic period can exist after a period where a data frame **is** sent to an access terminal and contains a “last” data frame before a maximum-zero-traffic period starts, and where this “last” data frame originates from a device transmitting to the wireless network (a processing device configured to prolong an existence of a downlink by sending post-speech packets for a time of duration, an apparatus is configured to transmit post-speech packets to a downlink after receiving a packet indicating an end of speech samples from an uplink). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA

aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

Soulabail teaches in paragraphs [0034], [0048], and [0049], and in FIG. 3 and FIG. 6, a guard period (item 36, FIG. 3) is a variable quantity, and there a certain amount of delay (item 69, FIG. 6) between a downlink burst and a next following uplink burst (a server or a processing device configured to prolong the existence of downlinks for a time of such duration that at least one new uplink can be established from a receiving terminal). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Soulabail in the invention of Forssell since Soulabail provides a system where data is transferred downlink and uplink between a base transceiver station and a mobile station over a single channel through time division duplex, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of time division duplex in wireless communications since it conserves bandwidth by utilizing a single channel in both directions of communications, and Soulabail also provides a system that allows a variable guard time between downlink and uplink transmissions, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of a variable guard time since it allows adaptations to changes in variable communication conditions.

Simard teaches in column 9, lines 22-25, a talker selection algorithm could transmit empty voice data to terminals within a voice conference when there are no talkers selected in order to maintain continuous packet transmission (a plurality of

downlinks). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Simard in the teachings of Forssell since Simard provides a system for voice conferences within packet-based communication networks that provides a reduction in transcoding, latency, and/or required signal processing power (see Simard, column 3, line 65 to column 4, line 15, and column 5, lines 53-59), which can be introduced into the packet-based network of Forssell to allow efficient voice conferencing to users.

As for Claims 15 and 16, Forssell shows in paragraph [0006] and in Fig. 1a, page 14, the network of “a cellular radio system” (cellular network).

Forssell teaches in paragraph [0013], lines 38 and 41, that “a Temporary Block Flow (TBF) is created for transferring data packets on a packet data channel” for services that include “voice services” (a last speech packet).

Forssell shows in paragraph [0007], lines 51-55, and Fig. 1b, page 14, the “operational environment comprises one or more subnetwork service areas,” which are interconnected by a backbone network and where each “subnetwork comprises a number of packet data service nodes”, which provide a packet service for mobile data terminals 151 via several base stations 152” (a server in a cellular network comprising a receiver configured to receive a last speech sample packet in an uplink direction).

Forssell teaches in paragraph [0042], lines 40-41, that “the network is informed at the end of an active period, on whether a passive period follows the active period”, and, in paragraph [0044], lines 55-56, “on a downlink channel, after one mobile station starts

to transmit, the other mobile stations may be reallocated to other channels", showing that a passive period can occur after an active period on an uplink channel and on a downlink channel, and a mobile station of the downlink channel can start transmitting on the channel (a server or a processing device configured to prolong the existence of downlinks for a time of such duration that at least one new uplink can be established from a receiving terminal).

Forssell does not teach a processing device configured to prolong an existence of a downlink by sending post-speech packets for a time of duration, an apparatus is configured to transmit post-speech packets to a downlink after receiving a packet indicating an end of speech samples from an uplink, a server or a processing device configured to prolong the existence of downlinks for a time of such duration that at least one new uplink can be established from a receiving terminal, and a plurality of downlinks.

Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal does not successfully decode any data frame or null frame on a traffic channel for a specified number maximum-zero-traffic periods, the access terminal declares a loss of its connection with a base station and stops transmitting, and, in column 6, line 59 to column 7, line 3, if a forward link data queue for an access terminal remains empty such that a maximum-zero-traffic period might elapse without sending a data packet to the access terminal, a wireless network transmits a "null data packet" to the access

terminal, and where a supervisory period is at least twice as long as a maximum-zero-traffic period, to allow an access terminal to lose (due to communication error) a few null data packets without immediately releasing its connection, and since a maximum-zero-traffic period can elapse without a data frame being sent to an access terminal, this implies that a maximum-zero-traffic period can exist after a period where a data frame **is** sent to an access terminal and contains a “last” data frame before a maximum-zero-traffic period starts, and where this “last” data frame originates from a device transmitting to the wireless network (maintain a dedicated channel between a sending terminal and a receiving terminal by sending after a last speech packet from a sending terminal, post-speech packets to a receiving terminal for a time of duration). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

Soulabail teaches in paragraphs [0034], [0048], and [0049], and in FIG. 3 and FIG. 6, a guard period (item 36, FIG. 3) is a variable quantity, and there a certain amount of delay (item 69, FIG. 6) between a downlink burst and a next following uplink

burst (maintain a dedicated channel between a sending terminal and a receiving for a time of such duration that a new dedicated channel can be established utilizing an earlier dedicated channel). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Soulabail in the invention of Forssell since Soulabail provides a system where data is transferred downlink and uplink between a base transceiver station and a mobile station over a single channel through time division duplex, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of time division duplex in wireless communications since it conserves bandwidth by utilizing a single channel in both directions of communications, and Soulabail also provides a system that allows a variable guard time between downlink and uplink transmissions, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of a variable guard time since it allows adaptations to changes in variable communication conditions.

Simard teaches in column 9, lines 22-25, a talker selection algorithm could transmit empty voice data to terminals within a voice conference when there are no talkers selected in order to maintain continuous packet transmission (a plurality of receiving terminals). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Simard in the teachings of Forssell since Simard provides a system for voice conferences within packet-based communication networks that provides a reduction in transcoding, latency, and/or required signal processing power (see Simard, column 3, line 65 to column 4, line 15, and column 5,

lines 53-59), which can be introduced into the packet-based network of Forssell to allow efficient voice conferencing to users.

As for Claim 19, Forssell teaches in paragraph [0062], lines 28-30, and FIG. 5, page 16, “When the CV' value is set to "0" the network interprets it so that the first mobile station has no more RLC data blocks to be transmitted at the time and the network may therefore give the next N uplink transmit permissions to some other mobile station/stations”, and, in lines 34-35, “If the mobile station does not have data to be transmitted, to the network at the time, the mobile station may omit the uplink transmit permission or it may transmit a Packet Dummy Control Block or a signalling message” (substantively the same as “an element for sending post-speech packets is a terminal ending its transmission” in the instant invention).

As for Claim 24, Forssell teaches in paragraph [0015], lines 47-48, “uplink resource allocation” occurs when the “Mobile Station (MS) requests radio resources”. Forssell also teaches in paragraph [0026], line 15, “Downlink radio resource allocation”. Forssell also teaches in paragraph [0007], from line 58 of page 2 to line 1 of page 3, “packet data transmission between mobile data terminals”, implicitly teaching that transmissions between mobile terminals involve an uplink for a transmitting mobile station and a downlink for a receiving mobile station (communicating through a dedicated channel comprising both an uplink and a downlink).

Forssell shows in paragraph [0006], line 33, and Fig. 1a, page 14, “the core network of a cellular system 10” (substantively the same as “a core network” in instant invention).

Forssell shows in paragraph [0007], lines 51-55, and Fig. 1b, page 14, the “operational environment comprises one or more subnetwork service areas,” which are interconnected by a backbone network and where each “subnetwork comprises a number of packet data service nodes”, which provide a packet service for mobile data terminals 151 via several base stations 152” (controlling a flow of data packets by at least one of a server function and a server in a core network).

Forssell further teaches in paragraph [0086], lines 40-42,47-49, “the processing of information in a telecommunication device takes place in an arrangement of processing capacity in the form of microprocessor(s) and memory in the form of memory circuits. Such arrangements are known as such from the technology of mobile stations and fixed network elements”, and “On the network side, the features according to the invention can be implemented e.g. in the Packet Control Unit PCU”, where “The packet control unit may be located e.g. in the … Serving GPRS Support Node SGSN” (a computer readable medium encoded with a computer program executable to perform actions).

Forssell fails to teach keeping up a dedicated channel downlink from a core network by sending post-speech packets for a time of duration, a server function in a core network transmits post-speech packets to a downlink after receiving a packet indicating an end of speech samples from an uplink, keeping up a dedicated channel

after a last speech sample packet is sent downlink from a core network for a time of such duration that a new uplink can be established utilizing a downlink from a core network, and a dedicated channel comprising both an uplink and a plurality of downlinks.

Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal does not successfully decode any data frame or null frame on a traffic channel for a specified number maximum-zero-traffic periods, the access terminal declares a loss of its connection with a base station and stops transmitting, and, in column 6, line 59 to column 7, line 3, if a forward link data queue for an access terminal remains empty such that a maximum-zero-traffic period might elapse without sending a data packet to the access terminal, a wireless network transmits a “null data packet” to the access terminal, and where a supervisory period is at least twice as long as a maximum-zero-traffic period, to allow an access terminal to lose (due to communication error) a few null data packets without immediately releasing its connection, and since a maximum-zero-traffic period can elapse without a data frame being sent to an access terminal, this implies that a maximum-zero-traffic period can exist after a period where a data frame **is** sent to an access terminal and contains a “last” data frame before a maximum-zero-traffic period starts, and where this “last” data frame originates from a device transmitting to the wireless network (keeping up a dedicated channel downlink from a core network by sending post-speech packets for a time of duration, a server function in

a core network transmits post-speech packets to a downlink after receiving a packet indicating an end of speech samples from an uplink). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

Soulabail teaches in paragraphs [0034], [0048], and [0049], and in FIG. 3 and FIG. 6, a guard period (item 36, FIG. 3) is a variable quantity, and there a certain amount of delay (item 69, FIG. 6) between a downlink burst and a next following uplink burst (keeping up a dedicated channel after a last speech sample packet is sent downlink from a core network for a time of such duration that a new uplink can be established utilizing a downlink from a core network). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Soulabail in the invention of Forssell since Soulabail provides a system where data is transferred downlink and uplink between a base transceiver station and a mobile station over a single channel through time division duplex, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of time division

duplex in wireless communications since it conserves bandwidth by utilizing a single channel in both directions of communications, and Soulabail also provides a system that allows a variable guard time between downlink and uplink transmissions, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of a variable guard time since it allows adaptations to changes in variable communication conditions.

Simard teaches in column 9, lines 22-25, a talker selection algorithm could transmit empty voice data to terminals within a voice conference when there are no talkers selected in order to maintain continuous packet transmission (a dedicated channel comprising both an uplink and a plurality of downlinks). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Simard in the teachings of Forssell since Simard provides a system for voice conferences within packet-based communication networks that provides a reduction in transcoding, latency, and/or required signal processing power (see Simard, column 3, line 65 to column 4, line 15, and column 5, lines 53-59), which can be introduced into the packet-based network of Forssell to allow efficient voice conferencing to users.

As for Claim 25, Forssell teaches in paragraph [0042], lines 40-41, “the network is informed at the end of an active period, on whether a passive period follows the active period or if the connection can be released” (substantively the same as “the

server determining when the last speech sample packet is sent" in the instant invention).

Forssell teaches in paragraph [0044], lines 53-54, "on an uplink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels", and in lines 56-57, "on a downlink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels" (substantively the same as "determining whether a terminal taking part in the session needs a new uplink" and "establishing said new uplink is established" in the instant invention).

Forssell does not teach "server sending at least one post-speech packet downlink to receiving terminals".

Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal does not successfully decode any data frame or null frame on a traffic channel for a specified number maximum-zero-traffic periods, the access terminal declares a loss of its connection with a base station and stops transmitting, (server sending at least one post-speech packet downlink to receiving terminals). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are

maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

Claims 3 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, Simard, and further in view of Upp et al. (Pub. No.: US 2004/0002351 A1), hereafter referred to as Upp.

As for Claim 3, Forssell teaches in paragraph [0034], pages 53-54, that the "network sets the FBI field to '1' when it has no more RLC data blocks to send to the mobile station" (substantively the same as "receiving terminal…receiving the last speech sample packet" in the instant invention).

Forssell does not teach that the receiving terminal signals the user.

Upp teaches in paragraph [0003], "mobile communication device, which then alerts the user that the channel is open and the user may commence speaking" (substantively the same as "receiving terminal signals the user of the terminal" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the method and system for patching dispatch calling parties together and alerting users of Upp with the real time data network of Forssell since it will allow the network to efficiently form and connect talk groups for subscribers.

As for Claim 26, Forssell teaches in paragraph [0034], pages 53-54, that the “network sets the FBI field to ‘1’ when it has no more RLC data blocks to send to the mobile station” (substantively the same as “receiving terminal…receiving the last speech sample packet” in the instant invention).

Forssell further teaches in paragraph [0086], lines 40-42,47-49, “the processing of information in a telecommunication device takes place in an arrangement of processing capacity in the form of microprocessor(s) and memory in the form of memory circuits. Such arrangements are known as such from the technology of mobile stations and fixed network elements”, and “On the network side, the features according to the invention can be implemented e.g. in the Packet Control Unit PCU”, where “The packet control unit may be located e.g. in the … Serving GPRS Support Node SGSN” (a computer readable medium encoded with a computer program executable to perform actions).

Forssell does not teach that the receiving terminal signals the user.

Upp teaches in paragraph [0003], “mobile communication device, which then alerts the user that the channel is open and the user may commence speaking” (substantively the same as “receiving terminal signals the user of the terminal” in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the method and system for patching dispatch calling parties together and alerting users of Upp with the real time data network of Forssell since it will allow the network to efficiently form and connect talk groups for subscribers.

Claims 4, 5, 10, 20, 21, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, Simard, and further in view of Lechleider (Patent Number: 6,058,109) and Rinchiuso et al. (Pub. No.: US 2004/0196861 A1), the last two references are hereafter referred to as Lechleider and Rinchiuso, respectively.

As for Claim 4, Forssell in view of Bender and Soulabail as applied to Claim 2 teach all those limitations.

Forssell fails to teach a number of post-speech packets to send and intervals in which to send post-speech packets.

Lechleider teaches in lines 34-36, column 6, of a system that “transmits at a rate of 2 packets per second” (substantively the same as “post-speech packets are sent…at intervals of 500 ms” in the instant invention). Lechleider teaches in lines 35-36, column 6, where a “uniform transmitter packet buffer 250 is 10 packets long”, and Lechleider also teaches in lines 48-49, column 6, where a “packet buffer 330 initially waits until 10 packets have been stored before it initiates transmission”, providing a situation where only 10 packets may be transmitted (substantively the same as “packets are sent…10 times” in the instant invention”). As indicated in line 28, column 6, these are illustrative examples, and Lechleider does not exclude that the buffers’ operation could involve less than 10 packets (substantively the same as “packets are sent downlink 5 to 10 times” in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the system of data transmission during link termination delays of

Lechleider into the real time data network of Forssell since it would aid in maximizing the total data transmitted during the active period of a channel.

Rinchiuso teaches in paragraph [0031], “the delay period (X) is varied based on the data transmission rate. More particularly, as the data rate increases, the delay will increase proportionally. In the preferred embodiment of the present invention a delay of 200 msec is used for average data rates of 19 KBPS. The delay period is increased linearly to 500 msec for data rates of 100 KBPS. Varying the delay period in proportion to the data transmission rate” (substantively the same as “at intervals of 500 ms at most” in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the channel dropping delay based on data rate system of Rinchiuso into the real time data network of Forssell since it “can cut down on the bouncing effect, while minimizing the time period a remote unit needlessly holds” a channel (see paragraph [0031] of Rinchiuso).

As for Claim 5, Forssell teaches in paragraph [0043], lines 49-51, “The network may use a timer function for determining whether a passive period follows the active period or if the connection can be released.” “…when a predetermined time of inactive data transfer has passed, the TBF is released” (substantively the same as “after the last post-speech packet the downlink used is released after a delay specific to the cellular network” in the instant invention).

As for Claim 10, the Forssell in view of Bender, Soulabail, and Simard as applied to Claim 9 teach all those limitations.

Forssell fails to teach a number of post-speech packets to send and intervals in which to send post-speech packets.

Lechleider teaches in lines 34-36, column 6, of a system that “transmits at a rate of 2 packets per second” (post-speech packets are sent…at intervals of 500 ms). Lechleider teaches in lines 35-36, column 6, where a “uniform transmitter packet buffer 250 is 10 packets long”, and Lechleider also teaches in lines 48-49, column 6, where a “packet buffer 330 initially waits until 10 packets have been stored before it initiates transmission”, providing a situation where only 10 packets may be transmitted (substantively the same as “packets are sent…10 times” in the instant invention”). As indicated in line 28, column 6, these are illustrative examples, and Lechleider does not exclude that the buffers’ operation could involve less than 10 packets (substantively the same as “packets are sent downlink 5 to 10 times” in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the system of data transmission during link termination delays of Lechleider into the real time data network of Forssell since it would aid in maximizing the total data transmitted during the active period of a channel.

Rinchiuso teaches in paragraph [0031], “the delay period (X) is varied based on the data transmission rate. More particularly, as the data rate increases, the delay will increase proportionally. In the preferred embodiment of the present invention a delay of 200 msec is used for average data rates of 19 KBPS. The delay period is increased

linearly to 500 msec for data rates of 100 KBPS. Varying the delay period in proportion to the data transmission rate" (at intervals of 500 ms at most). It would have been obvious to one skilled in the art at the time of the invention to adopt the channel dropping delay based on data rate system of Rinchiuso into the real time data network of Forssell since it "can cut down on the bouncing effect, while minimizing the time period a remote unit needlessly holds" a channel (see paragraph [0031] of Rinchiuso).

As for Claim 20, Forssell in view of Bender, Soulabail, and Simard as applied to Claim 16 teach those limitations.

Forssell fails to teach a number of post-speech packets to send and intervals in which to send post-speech packets.

Lechleider teaches in lines 34-36, column 6, of a system that "transmits at a rate of 2 packets per second" (post-speech packets are sent…at intervals of 500 ms). Lechleider teaches in lines 35-36, column 6, where a "uniform transmitter packet buffer 250 is 10 packets long", and Lechleider also teaches in lines 48-49, column 6, where a "packet buffer 330 initially waits until 10 packets have been stored before it initiates transmission", providing a situation where only 10 packets may be transmitted (substantively the same as "packets are sent…10 times" in the instant invention"). As indicated in line 28, column 6, these are illustrative examples, and Lechleider does not exclude that the buffers' operation could involve less than 10 packets (packets are sent downlink 5 to 10 times). It would have been obvious to one skilled in the art at the time of the invention to adopt the system of data transmission during link termination delays

of Lechleider into the real time data network of Forssell since it would aid in maximizing the total data transmitted during the active period of a channel.

Rinchiuso teaches in paragraph [0031], “the delay period (X) is varied based on the data transmission rate. More particularly, as the data rate increases, the delay will increase proportionally. In the preferred embodiment of the present invention a delay of 200 msec is used for average data rates of 19 KBPS. The delay period is increased linearly to 500 msec for data rates of 100 KBPS. Varying the delay period in proportion to the data transmission rate” (at intervals of 500 ms at most). It would have been obvious to one skilled in the art at the time of the invention to adopt the channel dropping delay based on data rate system of Rinchiuso into the real time data network of Forssell since it “can cut down on the bouncing effect, while minimizing the time period a remote unit needlessly holds” a channel (see paragraph [0031] of Rinchiuso).

As for Claim 21, Forssell teaches in paragraph [0043], lines 49-51, “The network may use a timer function for determining whether a passive period follows the active period or if the connection can be released.” “…when a predetermined time of inactive data transfer has passed, the TBF is released” (after a last post-speech packet said earlier dedicated channel is arranged to be released after a delay specific to the network).

As for Claim 27, Forssell in view of Bender and Soulabail as applied to Claim 25 teach all those limitations.

Forssell fails to teach a number of post-speech packets to send and intervals in which to send post-speech packets.

Lechleider teaches in lines 34-36, column 6, of a system that “transmits at a rate of 2 packets per second” (substantively the same as “post-speech packets are sent…at intervals of 500 ms” in the instant invention). Lechleider teaches in lines 35-36, column 6, where a “uniform transmitter packet buffer 250 is 10 packets long”, and Lechleider also teaches in lines 48-49, column 6, where a “packet buffer 330 initially waits until 10 packets have been stored before it initiates transmission”, providing a situation where only 10 packets may be transmitted (substantively the same as “packets are sent…10 times” in the instant invention”). As indicated in line 28, column 6, these are illustrative examples, and Lechleider does not exclude that the buffers’ operation could involve less than 10 packets (substantively the same as “packets are sent downlink 5 to 10 times” in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the system of data transmission during link termination delays of Lechleider into the real time data network of Forssell since it would aid in maximizing the total data transmitted during the active period of a channel.

Rinchiuso teaches in paragraph [0031], “the delay period (X) is varied based on the data transmission rate. More particularly, as the data rate increases, the delay will increase proportionally. In the preferred embodiment of the present invention a delay of 200 msec is used for average data rates of 19 KBPS. The delay period is increased linearly to 500 msec for data rates of 100 KBPS. Varying the delay period in proportion to the data transmission rate” (substantively the same as “at intervals of 500 ms at

most” in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the channel dropping delay based on data rate system of Rinchiuso into the real time data network of Forssell since it “can cut down on the bouncing effect, while minimizing the time period a remote unit needlessly holds” a channel (see paragraph [0031] of Rinchiuso).

As for Claim 28, Forssell teaches in paragraph [0043], lines 49-51, “The network may use a timer function for determining whether a passive period follows the active period or if the connection can be released.” “…when a predetermined time of inactive data transfer has passed, the TBF is released” (substantively the same as “after the last post-speech packet the downlink used is released after a delay specific to the cellular network” in the instant invention).

Claims 6, 11 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, Simard, Lechleider, Rinchiuso, and further in view of Schieder et al. (EP 1 139 613 A1), hereafter referred to as Schieder.

As for Claim 6, as discussed in the rejection of Claim 1, Forssell teaches a method and a terminal and an uplink.

Forssell does not teach sending post-speech packet to the terminal that used the uplink.

Schieder teaches in paragraph [0035], lines 51-54, and FIG. 5a, page 23, after the mobile station side transmits the last data block on an uplink (see item ST5a1, FIG

5a), “the network side will first transmit a so-called packet uplink acknowledgement/negative acknowledgement message in step ST5a2 … to the subscriber terminal side” (post-speech packets are also sent to the terminal that used the uplink). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, “the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users” (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

As for Claim 11, as discussed in the rejection of Claim 8, Forssell in view of Bender, Soulabail, and Simard teaches a server and post-speech packets.

Forssell does not teach information intended for the user terminal in the post-speech packet.

Schieder teaches in paragraph [0052], lines 37-38, “the entry of a new data packet in the network side transmitter queue is not detected”, then, in lines 40-42, “the network side can also transmit a signalling message to the subscriber terminal side and

in association therewith a transmitter queue information" (include in post-speech packets information intended for the user of the terminal). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, "the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users" (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

As for Claim 29, as discussed in the rejection of Claim 27, Forssell teaches a method and a terminal and an uplink.

Forssell does not teach sending post-speech packet to the terminal that used the uplink.

Schieder teaches in paragraph [0035], lines 51-54, and FIG. 5a, page 23, after the mobile station side transmits the last data block on an uplink (see item ST5a1, FIG 5a), "the network side will first transmit a so-called packet uplink acknowledgement/negative acknowledgement message in step ST5a2 … to the

subscriber terminal side" (post-speech packets are also sent to the terminal that used the uplink). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, "the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users" (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

Claims 7 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, Simard, and further in view of Kajizaki et al. (Pub. No.: US 2001/0055317 A1), hereafter referred to as Kajizaki.

As for Claim 7, Forssell in view of Bender and Soulabail as applied to Claims 1 and 2 teach those limitations.

Forssell fails to teach appending packets together.

Kajizaki teaches in the abstract, "When a routing processing unit detects the transmission of a … number of packets addressed to the same destination … A combining unit assembles a combined packet", and in paragraph [0011], an apparatus

comprises a disassembling unit for disassembling a received combined packet into individual packets if a destination address of a received combined packet matches an address of an apparatus (a post-speech packet is appended to a last speech packet received by a server function). It would have been obvious to one skilled in the art at the time of the invention to adopt the packet combining of Kajizaki into the real time data network of Forssell since packets below a certain size can result in unacceptable overhead and inefficient link performance.

As for Claim 30, Forssell in view of Bender and Soulabail as applied to Claims 24 and 25 teach those limitations.

Forssell fails to teach appending packets together.

Kajizaki teaches in the abstract, “When a routing processing unit detects the transmission of a … number of packets addressed to the same destination … A combining unit assembles a combined packet”, and in paragraph [0011], an apparatus comprises a disassembling unit for disassembling a received combined packet into individual packets if a destination address of a received combined packet matches an address of an apparatus (a post-speech packet is appended to a last speech packet received by a server function). It would have been obvious to one skilled in the art at the time of the invention to adopt the packet combining of Kajizaki into the real time data network of Forssell since packets below a certain size can result in unacceptable overhead and inefficient link performance.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender.

As for Claim 12, Forssell shows in paragraph [0084], and FIG. 10, page 20, shows a “block diagram of a mobile station 100”, where a control unit (item 103) is substantively the same as the control unit of applicant, a RR-receiver, A/D-converter (item 111) is substantively the same as the receiver RX of applicant, a memory (item 104) is substantively the same as the memory of applicant, a modulator, RF-transmitter (item 123) is substantively the same as the transmitter TX of applicant, and a keyboard (item 131) and a display (item 132) are substantively the same as the user interface UI of applicant (cellular terminal, comprising a control unit).

Forssell does not teach a terminal recognizing post-speech packets which are transferable on a packet data channel.

Bender teaches in column 4, lines 2-6, if an access terminal does not successfully decode any data frame or null data frame on any of its traffic channels for a specified number maximum-zero-traffic periods, an access terminal declares a loss of its connection with a base station and stops transmitting (a terminal recognizing post-speech packets which are transferable on a packet data channel). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too

long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, and further in view of Upp.

As for Claim 13, Forssell teaches in paragraph [0034], pages 53-54, that the "network sets the FBI field to '1' when it has no more RLC data blocks to send to the mobile station" (after receiving a last speech sample packet).

Forssell does not teach that the receiving terminal signals the user.

Upp teaches in paragraph [0003], "mobile communication device, which then alerts the user that the channel is open and the user may commence speaking" (substantively the same as "a control unit further configures to perform signaling" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the method and system for patching dispatch calling parties together and alerting users of Upp with the real time data network of Forssell since it will allow the network to efficiently form and connect talk groups for subscribers.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, and further in view of Kajizaki.

As for Claim 14, Forssell in view of Schieder as applied to Claim 12 teach all those limitations.

Forssell fails to teach appending packets together.

Kajizaki teaches in the abstract, “When a routing processing unit detects the transmission of a … number of packets addressed to the same destination … A combining unit assembles a combined packet” (where the received post-speech packets are appended to speech sample packets). It would have been obvious to one skilled in the art at the time of the invention to adopt the packet combining of Kajizaki into the real time data network of Forssell since packets below a certain size can result in unacceptable overhead and inefficient link performance.

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, Simard, and further in view of Schieder.

As for Claim 17, as discussed in the rejection of Claim 15, Forssell in view of Cromer teaches a network post-speech packets.

Forssell does not teach that non-speech packets are sent from a server operating in the network.

Schieder shows in paragraph [0035], lines 51-54, and FIG. 5a, page 23, item ST5a2, that the network side will transmit a non-data message to the subscriber terminal after the subscriber terminal has finished sending data packets. Schieder also shows in paragraph [0087], lines 22-26, and FIG. 10, page 29, item ST102, that the network side NS will transmit a non-data packet after the network side NS has finished

sending data packets. In both cases, it is not specified which network side (NS) element of FIG. 1, page 18, sends the non-data message and packet. As a result, Schieder implicitly teaches that any one of the network side (NS) element could be the origination of the non-data message or packet. Schieder teaches in paragraph [0006], lines 50-55, and FIG. 1, that a network side (NS) element is a SGSN, where a “node SGSN (SGSN: Serving GPRS Support Node) is provided which is interfaced via interfaces Gb, Gs, Gr with the base station controller BSC, the mobile switching centre MSC and the home location register HLR. Via the SGSN node an IP backbone network can be accessible in the conventional mobile communication network.” (Substantively the same as “an element for sending post-speech packets is a server operating in the network” in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, “the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users” (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

As for Claim 18, Forssell in view of Cromer and Schieder as applied to Claim 17 teach all those limitations.

Forssell fails to teach a router server.

Schieder shows in FIG. 2, page 19, that the SGSN (see also FIG. 1, page 18, item SGSN) operates with the Layer 3, IP-based protocols SNDCP and GTP, teaching that the SGSN provides routing functions (substantively the same as “the server sending post-speech packets is a router server” in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, “the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users” (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender and Simard.

As for Claim 22, Forssell teaches in paragraph [0042], lines 40-41, that "the network is informed at the end of an active period, on whether a passive period follows the active period", and, in paragraph [0044], lines 55-56, "on a downlink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels", showing that a passive period can occur after an active period on an uplink channel and on a downlink channel, and a mobile station of the downlink channel can start transmitting on the channel (determining whether a receiving terminal taking part in a session needs a new uplink, and establishing an uplink).

Forssell further teaches in paragraph [0086], lines 40-42,47-49, "the processing of information in a telecommunication device takes place in an arrangement of processing capacity in the form of microprocessor(s) and memory in the form of memory circuits. Such arrangements are known as such from the technology of mobile stations and fixed network elements", and "On the network side, the features according to the invention can be implemented e.g. in the Packet Control Unit PCU", where "The packet control unit may be located e.g. in the … Serving GPRS Support Node SGSN" (a data storage medium encoded with software readable by a data processing device for performing actions).

Forssell fails to teach determining when a last speech sample packet is sent uplink, sending a post-speech packet to a plurality of receiving terminals.

Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal

does not successfully decode any data frame or null frame on a traffic channel for a specified number maximum-zero-traffic periods, the access terminal declares a loss of its connection with a base station and stops transmitting, and, in column 6, line 59 to column 7, line 3, if a forward link data queue for an access terminal remains empty such that a maximum-zero-traffic period might elapse without sending a data packet to the access terminal, a wireless network transmits a “null data packet” to the access terminal, and where a supervisory period is at least twice as long as a maximum-zero-traffic period, to allow an access terminal to lose (due to communication error) a few null data packets without immediately releasing its connection, and since a maximum-zero-traffic period can elapse without a data frame being sent to an access terminal, this implies that a maximum-zero-traffic period can exist after a period where a data frame **is** sent to an access terminal and contains a “last” data frame before a maximum-zero-traffic period starts, and where this “last” data frame originates from a device transmitting to the wireless network (determining when a last speech sample packet is sent uplink, sending a post-speech packet to a receiving terminal). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and

release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

Simard teaches in column 9, lines 22-25, a talker selection algorithm could transmit empty voice data to terminals within a voice conference when there are no talkers selected in order to maintain continuous packet transmission (sending a post-speech packet to a plurality of receiving terminals). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Simard in the teachings of Forssell since Simard provides a system for voice conferences within packet-based communication networks that provides a reduction in transcoding, latency, and/or required signal processing power (see Simard, column 3, line 65 to column 4, line 15, and column 5, lines 53-59), which can be introduced into the packet-based network of Forssell to allow efficient voice conferencing to users.

Response to Arguments

I. Arguments for Claim Rejections under 35 USC § 103.

Applicant's arguments filed 09/04/2008 have been fully considered but they are not persuasive. Applicants submit that there is no need in Forssell to send any surplus packets during the passive period as they would not give any additional information to the receiving party about the length of the passive period, and, secondly, possible surplus packets would not matter as it appears the temporary block flow (TBF) is in active state during the whole passive period according to the description of Forssell. Examiner respectfully disagrees this is sufficient for the withdrawal of the rejections of

Applicants' claims. Bender is applied in combination with Forssell and, as discussed in the rejection of Claim 1, Bender teaches transmitting null data frames to extend a connection beyond a maximum-zero-traffic period, which can be introduced into the system of Forssell to vary a passive period or to extend a passive period if needed in a similar way as extending beyond a maximum-zero-traffic period in the system of Bender, and a person of ordinary skill in the art at the time of the invention would implement a transmission of null data to extend a channel beyond an original period if original passive periods prove to be too short, just as Bender extends a channel beyond a maximum-zero-traffic period.

Applicants submit that in Forssell the terminal informs the network of a need to keep up the connection either by sending a signal embedded in a data header during an active data transmission or a control channel signal during the pause (i.e. a silent period) in a control channel, and that embedding data in a header of an ordinary data packet is in any case is distinct from sending a post-speech packet, regardless of the timing. Examiner respectfully disagrees this is sufficient for the withdrawal of the rejections of Applicants' claims. As discussed in the rejection of Claim 1, Bender teaches transmitting null data frames in a data channel.

Applicants also submit that Bender depicts a method utilized in a CDMA system, and that the system of Bender is a circuit switched system where the downlink and uplink can be active at the same time (i.e. full-duplex system), and therefore, there is no need to establish an uplink after an end of a downlink transmission as in Applicants' present application (as the uplink exists already). Examiner respectfully

disagrees this is sufficient for the withdrawal of the rejections of Applicants' claims. The fact remains that Bender still teaches a technique for wireless voice communications between users, and that Bender teaches keeping up a downlink by sending post-speech packets and Forssell teaches establishing an uplink channel using a downlink channel after a downlink channel is not used.

Applicants submit that Soulabail discloses a time division duplex (TDD) system which is functionally a circuit switched system (i.e. half-duplex system), and time slots assigned to a base station and a mobile station alternate in the TDD system according to a predefined scheme, and in practice the transmission directions alternate so fast that a user of the TDD system experiences the function of the system to be "full-duplex", and that that due to the functionality of the TDD system a problem of establishing a new connection after an end of a downlink transmission does not exist at all in the system of Soulabail. Examiner respectfully disagrees this is sufficient for the withdrawal of the rejections of Applicants' claims. The fact remains that Soulabail still teaches a technique for wireless voice communications between users, and the guard periods are variable and can be adjusted for optimization in producing an uplink data transfer after a downlink data transfer utilizing a same channel, and this is substantively the same as keeping up a dedicated channel after a last speech sample packet is sent downlink from a core network for a time of such duration that a new uplink can be established utilizing a downlink from a core network in Applicants' invention.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA SMITH whose telephone number is (571)270-1826. The examiner can normally be reached on Monday-Thursday 9:30am-7pm, Alternating Fridays 9:30am-6pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua Smith
Patent Examiner
04 December 2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2419